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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 13

Application Number: 09/559,255
Filing Date: April 27, 2000
Appellant(s): IWASAKI, MASAJIRO

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Technology Center 2000

Mark J. Thronson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 03/17/2004.

(1)   Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2)   Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly

affect or be directly affected by or have a bearing on the decision in the pending appeal

is contained in the brief.

(3)   Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4)   Status of Amendments After Final

No amendment after final has been filed.

(5)   Summary of Invention

The summary of invention contained in the brief is correct.

(6)   Issues

The appellant's statement of the issues in the brief is correct.

(7)   Grouping of Claims

Appellant's brief includes a statement that claims 1-18 do not stand or fall

together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8)   Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9)   Prior Art of Record

6,121,969   JAIN et al.   9-2000

(10)   Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form

the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Jain et al.,

U.S. Patent Number 6,121,969, "Visual Navigation in Perceptual Databases", class

345/850, 09/19/2000, filed 07/29/1997.

As per independent claim 1, a method of displaying images that resemble each

other, comprising the steps of: extracting image features from images; (Jain discloses

extracting records from databases to search for attributes within images, col. 10, lines 1-

67) dividing a feature space of the image features into sub-spaces having a hierarchical

structure; (Jain discloses defining a display space metric derived from metrics defined

by a the user, col. 10, lines 35-41) generating a tree structure having the sub-spaces as

nodes thereof; (Jain discloses ranking the images within a data store on the basis of

similarity, col. 9, lines 35-41, see figure 2A and 2B) dividing a display space into divided

spaces reflecting the tree structure; (Jain discloses the display presents the images

within the manifold as a perceptual space having geometry in accordance with the

ranked images, col. 9, lines 42-52, figure 10) and assigning the image to the

corresponding divided spaces . . . (Jain discloses images laid out in a perceptual space

based upon a query of related images, col. 8, lines 12-20, figure 8)

With respect to dependent claim 2, dividing a feature space includes a step of

generating clusters having a circle shape by applying a clustering method recursively.

(Jain discloses recursively interacting with a database, col. 11, lines 1-2, and further

discloses the distributing or clustering in each axis of the display, see also figure 6)

With respect to dependent claim 3, clustering method includes the steps of:

obtaining a distance between an image feature and one of the clusters closest to the

image feature . . . ; selecting an image feature successively from the image features . . .

; obtaining an increase in a radius of each cluster . . . ; and making the selected image

feature belong to a cluster that has the smallest radius increase. (Jain discloses

clustering and tightly clustering based upon a criterion to disperse objects having similar

features, col. 11, lines 35-50)

With respect to dependent claim 4, dividing the display space includes the steps

of: dividing the display space in a direction of a selected dimension . . . for a given node

of the tree structure . . . ; and repeating said step by changing the selected dimension

as a new node is selected . . . (Jain discloses the display space is a subset of three

dimensional Euclidean space contained by a unit cube and further discloses the

distribution of images in the space uniform with respect to the metric of the space, col. 6, lines 30-44)

With respect to dependent claim 5, provides extra spaces between the divided spaces such that the extra spaces represent gaps between the nodes. (Jain discloses the images are grouped in accordance with their three-dimensional vector distances from the origin or reference image, col. 27, lines 31-38)

With respect to dependent claim 6, divides the display space such that the divided spaces corresponding to the respective nodes have sizes proportional to number of image features . . . (Jain discloses the display displays the object positionally with the plot, col. 17, lines 1-7)

With respect to dependent claim 7, divides the display space such that the divided spaces corresponding to the respective nodes have sizes proportional to sizes of the sub-spaces . . . (Jain discloses the displayed plot permits a relative axis and ranking order of some criteria, col. 17, lines 8-24)

With respect to dependent claim 8, adjusting sizes of the divided spaces such that the sizes of the divided spaces corresponding to the respective nodes reflect numbers of image features belonging to the respective nodes and sizes of the sub-spaces corresponding to the respective nodes. (Jain discloses a display of data object at small scale and relocating the scale objects, col. 27, lines 39-67, see also figures 6-9)

As per independent claim 9, 17 and 18, they are rejected based upon similar rational as above independent claim 1.

With respect to dependent claim 10-16, they are rejected based upon similar

rational as above dependent claim 2-8 respectively.

(11)   Response to Argument

Applicant's arguments filed 03/17/2004 have been fully considered but they are

not persuasive.

Applicant argues that Jain fails to disclose dividing a feature space into sub-

spaces having a hierarchical structure, generating a tree structure having the sub-

spaces as nodes thereof, and dividing a space into spaces corresponding to the

respective sub-spaces by taking into account the tree structure. Jain discloses a

display space as a subset of three-dimensional space and contained in a unit cube, col.

6, lines 30-44, and further discloses ranking the images and laying the images out to

preserve information about the relationship and presenting the ranked images as a

perceptual space having a geometry in accordance with the metric structure, col. 9,

lines 35-46. It is therefore the interpretation of the Examiner that the display space, i.e.

feature space, represented as a subset of three-dimensional space, i.e. a sub-space,

having a ranked structure in accordance with a metric structure, i.e. a hierarchical

structure, meet the claim limitation recited. Furthermore, it is well known that a

hierarchy is defined as a graded or ranked structure.

Applicant argues that Jain fails to disclose generating a tree structure having the

sub-spaces as nodes thereof. Jain discloses the object are searched, ordered and

displayed in a plot with the selected criterion lying along an associated axis, the objects

are displayed in which they are visually perceptible and positionally associated with the

plot along the associated axis, col. 13, line 55- col. 14, line 14, see also figure 2A and

2B. It is therefore the Examiner interpretation that the figures 2A and 2B represent a

tree structure, and furthermore associating an object positionally and visually, as a plot

along an axis constitutes a tree structure.

Applicant argues that Jain fails to disclose generating clusters having a circle

shape. Jain discloses in figures 4-9, clusters having circle shape. The Examiner cited

col. 11, lines 1-2, to show the feature of recursive interacting with an object having

attributes to develop criteria. Jain further discloses plotting the object in any of their

locations, dispersion, or clustering in each ordinate axis, col. 11, lines 35-38.

Applicant argues that Jain fails to disclose making an image feature belong to a

cluster that has the smallest radius increase. Jain discloses the plotted object are

tightly clustered for one or more criterion to discriminate among the object to show a

good dispersion relative to another criteria, and further manually selecting the criteria,

col. 11, lines 35-67, such as color or structure, col. 7, lines 63-67. Therefore, Jain

discloses obtaining a distance between an image feature and one of the clusters closest

to the image feature with respect to each of the image feature, col. 11, lines 35-40,

selecting an image feature successively from the image feature in an ascending order of

the distance; col. 11, lines 44-50; and obtaining an increase in radius of each cluster

such that each cluster contains the selected image feature; col. 11, lines 45-50; and

making the selected image feature belong to a cluster that has the smallest radius

increase, col. 11, lines 51-67.

Applicant argues that Jain fails to disclose selecting a new node from a next node level. Jain discloses selecting new criterion substituted for the old criterion, recursively formulating the new criterion and display the object plotted in accordance with the criterion, col. 11, lines 51-57. Jain further discloses the final display the object is displayed in which the criterion to the reference is closest and plotted at the origin of the display to identify close and distant objects by some criteria or criterion by dynamic interactive selection of the criteria, col. 11, lines 58-67. It is therefore the interpretation of the Examiner, that the selecting of a new node, i.e. new criteria, would change the dimension of the display space, by plotting the object based upon the relationship of the new criteria to identify the object distance.

Applicant argues that Jain fails to disclose extra spaces representing gaps between nodes. Jain discloses the images are grouped in accordance with their vector distances from the origin and further discloses the images may be equidistantly separated along an axis by with the image data distribution is observed, col. 27, lines 57-60. It is therefore the interpretation of the Examiner that providing an equidistant between the image data separated along an axis would create space between each node, i.e. image representation.

Applicant argues that Jain fails to disclose sizes proportional to numbers of image features belonging to the respective nodes. Jain discloses the images are grouped in accordance with their vector distances from the origin and further discloses the images may be equidistantly separated along an axis by with the image data distribution is observed, col. 27, lines 57-60.

Applicant argues that Jain fails to disclose sizes proportional to sizes of the sub-spaces corresponding to the respective nodes. Jain discloses the images are grouped in accordance with their vector distances from the origin and further discloses the images may be equidistantly separated along an axis by with the image data distribution is observed, col. 27, lines 57-60.

Applicant argues that Jain fails to disclose the display spaces reflect numbers of image feature belonging to the respective nodes and sizes of the sub-spaces corresponding to the respective nodes. Jain discloses the results are displayed in a plot, i.e. nodes, with each of the selected criterion, i.e. feature, and each plotted in position, i.e. space, along the axis, i.e. sub-space, in accordance with its attributes, col. 13, lines 57- col. 14, line 14.

Applicant argues that Jain fails to disclose computer-readable medium having a program embodied. Jain discloses variations and adaptations of the display for perceptual databases will suggest themselves to a practitioner of the computer and computer programming, col. 28, lines 62-66. Therefore it is the interpretation of the Examiner, that Jain discloses the embodiment adapted for a computer readable medium.

Applicant argues Jain fails to disclose program code limitations of claims 10-16 similar to the method limitations of dependent claims 2-8. Jain discloses variations and adaptations of the display for perceptual databases will suggest themselves to a practitioner of the computer and computer programming, col. 28, lines 62-66. Thus, disclosing the embodiment adapted for a computer readable medium, as would be

suggested by a computer programmer to perform the method steps recited in claims 2-8 of the method provided.

Applicant argues that Jain fails to disclose a display device that has a memory and a CPU. Jain discloses variations and adaptations of the display for perceptual databases will suggest themselves to a practitioner of the computer and computer programming, therefore it is the interpretation of the Examiner that Jain discloses the embodiment adapted for a computer readable medium, as would be suggested by a computer programmer, and a CPU, adapted to a practitioner of the computer. Jain further discloses a database and a display, figure 1, figure 4-9 and 11.

Applicant argues Jain fails to disclose computer-readable medium having a program to create a display screen image for displaying items that resemble each other. Jain discloses variations and adaptations of the display for perceptual databases will suggest themselves to a practitioner of the computer and computer programming, therefore it is the interpretation of the Examiner that Jain discloses the embodiment adapted for a computer readable medium, as would be suggested by a computer programmer to perform the method steps recited in claim 1 of the method provided. Jain further discloses in accordance with the present invention process capability to see where things are, how things compare, and how things change, col. 7, lines 20-23. It is therefore the interpretation of the Examiner that an item, constitutes a thing and the invention of Jain allows for the comparison and search of items as well as images.

For the above reasons, it is believed that the rejections should be sustained.
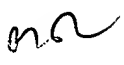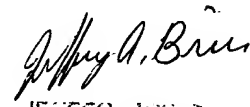
Respectfully submitted,

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May 28, 2004

Conferees
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